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ECOLOGICAL SUCCESSION OF PLANTS AND ANIMALS

Shelford (Biol. Bull., Dec., 1911) concludes a series of papers dealing with the biological succession in ponds at the head of Lake Michigan. The following are some of the conclusions reached by the author as the result of this series of interesting studies:

1. The quantity of bacteria, plankton, vegetation, and large animals increases with the age of the pond.
2. Terrigenous bottom and oxygen content decrease with the age of the pond.
3. Fish tend to adapt themselves to the type of food rather than to become distributed or furnish successions in accordance with the type of food. They are not necessarily most abundant where food is greatest.
4. Small oxygen content of older ponds will account for absence of fish from them.
5. Conditions outside the breeding season are probably less important than those of this season in determining the success of fish.
6. The conditions most favorable to the normal feeding of fish are not only different from those most favorable to breeding, but are even antagonistic; and the former tend to encroach on the latter, and the preservation of balance between the breeding conditions and the adult life-conditions.
7. Animal succession in ponds is due to an unused increment of excretory and decomposition products which causes increase in vegetation; a decrease in oxygen at the bottom; and a general change in the conditions affecting breeding.
8. Succession of particular species, rather than the continued dominance of some when they once become dominant, results from the inflexibility of their standards of demands in accordance with the changing conditions.

CHROMATIC REDUCTION IN CELL DEVELOPMENT

Rohde (Zeit. Wiss. Zool., 1911) undertakes to show that a marked characteristic of the differentiation and maturing of cells is the reduction of chromatin of the nucleus. He suggests, as illustrative of this, a series with bacteria at one end and the red blood-cells of mammals at the other. The bacteria he considers as prac-